Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Congruent Triangles Take Home Test  
Honors Geometry**

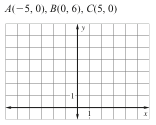
**Due: Monday, January 6th, 2014**

*I verify that the work below is mine, and that I have not worked with another person from class. In the event that my work is the same or similar to someone else’s, I will receive a 0 on this test and 4Ds.*

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Directions: Answer the following questions to the best of your ability. Show all of your work!*

1) A triangle has the given vertices. Graph the triangle and classify it by its sides by using the distance formula.



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2) a. Determine whether the points A(5, 3) and C(−1,−1) are equidistant from point B(2, 1). (Equidistant means “equal distance”).

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b. Suppose C is the midpoint of B and D(-4, y). Find the y-coordinate of point D using the distance formula.

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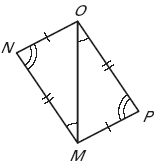
3) Determine whether the triangles are congruent. If they are, determine which congruence postulate is used.

|  |  |  |  |
| --- | --- | --- | --- |
| a.    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | b.    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | c.    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | d.    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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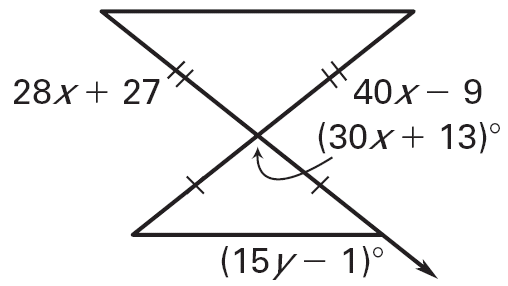
4) Use the figure below with the given markings to prove that Δ*NMO* ≅ Δ*POM* in two different ways.

|  |  |
| --- | --- |
| *Proof 1:* | *Proof 2:* |

**

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5) Find the value of x and y below. Show your work.

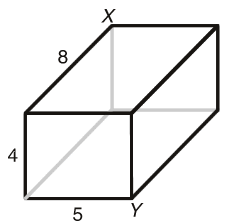


x =

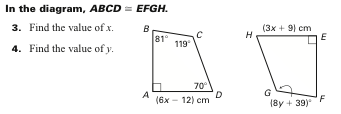
y =

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6) What is the length of the shortest string that can stretch from point X to point Y along the outside of the box in the diagram? (The dimensions are in inches.)



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7) In the diagram to the right, ABCD = EFGH.

a. Find the length of AD.

AD =

y =

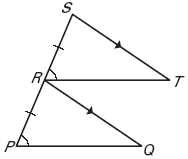
b. Find y. Round to the nearest tenth.

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8) GIVEN: ,

, 

PROVE: Δ*RST* ≅ Δ*PRQ*



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9) Given:  bisects 

 is an equilateral triangle

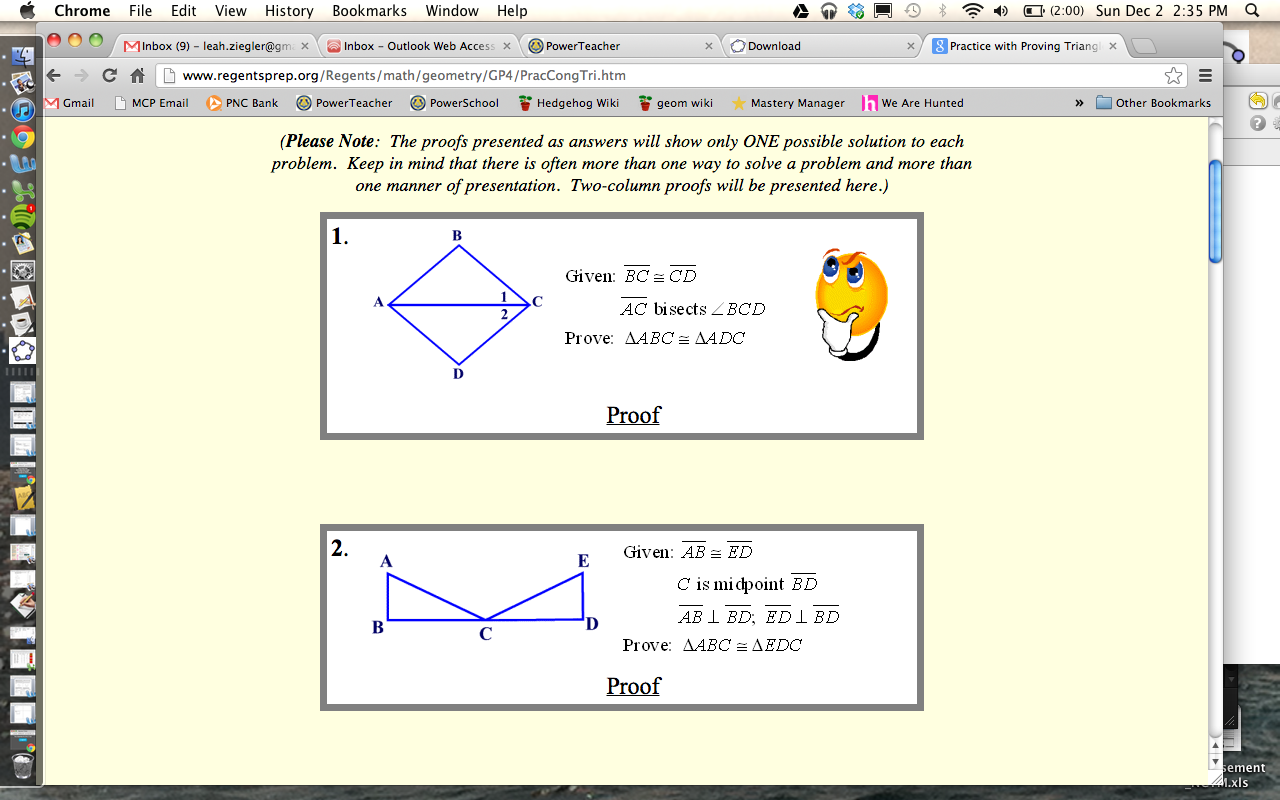
Prove: 



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10) Given: ,  bisects 

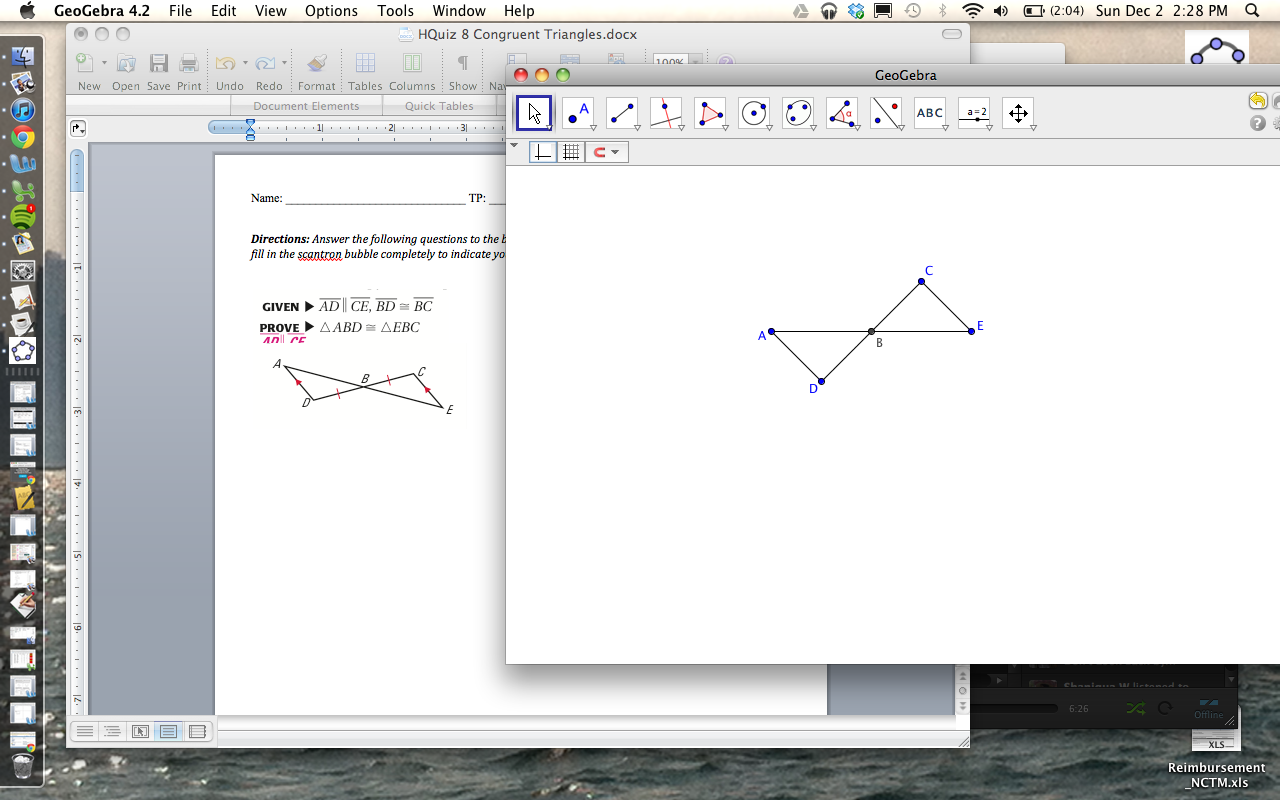
Prove: 



\_\_\_\_\_ / 5

11)Given: , B is the midpoint of 

Prove: 



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12) GIVEN: ,



*HF*

*IF*



*HG*

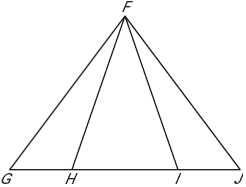
*I J*

PROVE:



*FG*

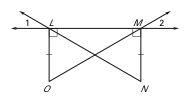
*FJ*



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13) GIVEN: Information in figure below

PROVE: 



\_\_\_\_\_/5